

الدليل الوراثي للمثابرة على إنتاج الحليب لدى ماشية الهولشتاين

أطروحة مقدمة إلى

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وهي من متطلبات درجة دكتوراه فلسفة في الثروة الحيوانية

من قبل

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Abstract

This study included 3660, 3090, 2735 and 2086 records of milk production of 60, 120, 180 and 270 days of lactation respectively over period from 1997 to 2000 at the Nasr Dairy cattle station, United Company for Animal Resources Ltd. AL-Soweira (50 km south of Baghdad).

The station had a herd of Holstein cows. A genetic index of persistency was derived of milk production for each cow depending on the difference between the BLUP, for 270 days of the lactation and the BLUP, for 60 days of the lactation to evaluate the herd's animals in the station genetically by that index.

General Linear model (GLM) within the SAS program was used to study the effects of some fixed factors (season and year of parturition, and parity) at 60, 120, 180 and 270 days of lactation.

Restricted Maximum likelihood (REML) was conducted to estimate variance components of random effects supposing mixed model Harvey program was used to evaluate Holstein herd animals to estimate the BLUP breeding values for 1497 cows and 26 bulls.

The estimating values were ranked in descending order for selection purposes by using those BLUP breeding values and the genetic index of persistency. Results can be summarized as follow:

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- 1- The overall mean of 60, 120 , 180 and 270 days of lactation was 1185.90 , 2311.00, 3328.80 and 4549.30 kg respectively.**
- 2- Season and year of parturition had significant effects ($P < 0.01$) in all studied traits to 60, 120, 180 and 270 days of the lactation. M.Y. in**
- 3- Results of this study showed that parity had a high significant effect on the studied traits.**

The maximum average of milk production at 60, 120, 180 and 270 days was 1151.82, 2259.97, 3247.54 and 4517.15 kg respectively for cows at the third parity.
- 4- Heritabilities milk yield up to for 60, 120, 180 and 270 days of lactation were 0.10 , 0.20 , 0.12 , and 0.06 respectively. Repeatability for the same traits were 0.18 , 0.18 0.16 and 0.33 respectively.**
- 5- The high genetic correlation was 0.79 between m.y.up to 60 and 120 days of lactation and the least 0.11 between m.y.120 and 180 days of lactation.**

The phenotypic correlation coefficient was the highest 0.88 between milk yiled up to 120 and 180 days of lactation and the least 0.23 between 60 and 180 days.
- 6- The highest BLUP values of bulls for 60, 120, 180 and 270 days of lactation were 17.13 , 65.52 , 39.52**

, and 8.37kg and the least were -16.25 , -42.90 , -58.44 and -10.29 kg respectively.

7- The high BLUP values of cows for milk yield up to 60,120,180 and 270 were 11.16 , 77.99 , 81.42 and 33.45kg the less were -19.84 , - 68.18 , -77.69 and - 33.95 kg respectively.

8-Results of this study showed that the highest genetic persistency value of cows was 27.09kg and the minimum was -22.32 kg.

9- Correlation coefficient among estimating breeding values was the highest (0.87) between 120 and 180 days and the least (0.50) between 60 and 270 days of lactation.

10- Results of this study showed the highest genetic persistency estimates foe bulls for different stages of mulk yield were 81.24 , 13.39 , 3.75 and 26.93 and the least were 3.41- , 42.24- , 84.33- , 70.57- and 37.92- for stages (120 -60 days) (180-60 days) (180 - 120 days) (270 - 120 days) (270 - 180 days) respectively.

11- The highest estimates for genetic persisterncy the better (10) cows the least (5) cows in the herd for different stages of lactation were 72.54 , 68.44 , 68.44 , 63.17 , 53.41 , 66.05 - , 57.85 - , 56.87 - , 48.84 - , and 36.35 – respectively .

12- Regression coefficient of BLUP values of milk yield up to 120 , 180 and 270 days with BLUP

values of milk yield up to 60 days , were high significant and they were 3.80 , 3.41 and 0.736 kg respectively

13- Correlation coefficient between genetic persistency and estimates BLUP for cows were positive and high significant and the highest was 0.99 and the minimum was 0.62 between BLUP of milk yield up to 120 day and genetic persistency.

14- The highest correlation coefficient was 0.98 and the minimum was 0.54 between BLUP of milk yield up to 60 and genetic persistency.